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SIDLEY AUSTIN BROWN & WOOD LLP
717 NORTH HARWOOD
SUITE 3400
DALLAS, TX 75201

EXAMINER	
MOE, AUNG SOE	
ART UNIT	**PAPER NUMBER**
2612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/523,367	Applicant(s) KUBO, HIROAKI	
	Examiner Aung S. Moe	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the amendment filed on 3/22/2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,13-15 and 17-20* is/are rejected.

7)☒ Claim(s) *8-12 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. An Information Disclosure Statement, along with a PTO Form 1449, which was filed on March 10, 2000 as stated by the Applicant's, is not found in the instant application. In view of this, the Applicant is respectfully requested to re-submit all the duplicate of IDS/1499 papers as originally filed on March 10, 2000.

Response to Arguments

2. Applicant's arguments filed on 3/22/2004 have been fully considered but they are not persuasive.

Regarding claim 1, the Applicant alleged (i.e., in page 11 of the remarks) "Steinberg '073 detects **an amount of the electrical load accumulation when using a flash exposure** not for duration of the flash exposure, but prior to duration of flash exposure. Thus, Steinberg '073 does not disclose a detector for detecting an amount of the electrical load accumulation when using a flash exposure for duration of the flash exposure."

In response, the Examiner respectfully disagrees because as admitted by the Applicant Steinberg '073 does in fact discloses a detector for detecting **an amount of the electrical load accumulation when using a flash exposure** (i.e., noted the flash exposure used in the steps 68, 84, 92, and 98 of Fig. 3) for a duration of the flash exposure (i.e., noted that the duration of light intensity as shown in Figs. 6A and 8 for a duration of the flash exposure when using a flash exposure; see col. 1, lines 45-50, col. 8, lines 58+, col. 9, lines 20+ and col. 10, lines 30+).

Furthermore, it is noted that claim 1 of present claimed invention is not limited to whether or not an amount of the electrical load accumulation is detected prior to duration of the flash exposure as argued by the Applicant. In fact, claim 1 of the instant claimed invention broadly stated "**the electrical load accumulation is detected when using a flash exposure for a duration of the flash exposure**". In this cause, Steinberg '073 clearly disclosed that the amount of electrical load accumulation of each of the at least one predetermined photoreceptor element (i.e., the electrical signals read from one of the areas 106, 108, 110 and 112 as shown in Figs. 4A-4B) is detected by the circuits 20 and 12 as shown in Figs. 3, 9 and 10 when using a flash exposure for a duration of the flash exposure (i.e., noted that each flash exposure applied during the steps 68, 84, 92 and/or 98 provides a duration of light intensity to expose the at lest one predetermined photoreceptor elements, thus, a duration of the flash exposure is part of a flash exposure used in the system of Steinberg '073; see col. 1, lines 45+ and col. 9, lines 20+). In view of this, Steinberg '073 does in fact anticipate the digital camera of claim 1.

Regarding claims 6 and 7, the Applicant alleged (i.e., in page 11 of the remarks) "while the data required to generate **a histogram may be used to find an average,** Steinberg '073 does not disclose finding an average."

In response, the Examiner respectfully disagrees because as clearly admitted by the Applicant as stated above that "a Histogram" as used in the system of Steinberg '073 can be used to find an average, and moreover, Steinberg '073 discloses the use of "a histogram" as shown in Figs. 6A and 8 for calculating **a weighted average** of the electrical load accumulation of the photoreceptor element for outputting the detection signal to control the flash operation (i.e., see

col. 9, lines 20+, col. 10, lines 30+ and col. 13, lines 10-20). In view of this, Steinberg '073 does in fact anticipate claims 6 and 7.

Regarding claim 13, the Applicant alleged (i.e., in page 12 of the remarks) "there is no disclosure that the location of predetermined photoreceptor elements can be adjusted, only the weighting of the photoreceptor elements at predetermined locations. Thus, Steinberg '073 fails to disclose a limitation of claim 13."

In response, Examiner respectfully disagrees because as shown in Figs. 4A and 4B a location of each of the at least one predetermined photoreceptor element is **arbitrarily** selected and **different location areas** can be selected according to the photographic conditions as discussed in col. 8, lines 40-57. In view of this, it is cleared that the location of the photoreceptor element as shown in Figs. 4A and 4B of Steinberg '073 can be adjusted, since they are arbitrarily selected based on the photographic conditions, such as exposure condition. Thus, Steinberg '073 does in fact anticipate claim 13.

Regarding claim 14, it is noted that claim 14 is also analyzed for the same reasons as discussed for claim 1 as set forth above, thus, the Applicant's attention is directed to the Examiner's comments as discussed above for claim 1.

Regarding claim 17, it is noted that claim 17 is also analyzed for the same reasons as discussed for claim 13 as set forth above, thus, the Applicant's attention is directed to the Examiner's comments as discussed above for claim 13.

Regarding claim 18, the Applicant alleged (i.e., in page 13 of the remarks) "Steinberg '073 does not disclose a detection signal based upon the accumulated electrical load for a duration of the flash exposure".

In response, the Examiner respectfully disagrees because as discussed for claim 1 above, a duration of the flash exposure is part of a flash exposure used in the system of Steinberg '073 (i.e., see col. 1, lines 45+ and col. 9, lines 20+), and the flash exposure is control based on the detected amount of image signal accumulated due to light exposure for a duration of the flash exposure, thus, a detection signal output in the blocks 90/88 is based upon the accumulated electrical load of the image data grabbed at the image grab steps for a duration of the flash exposure applied at the activate/sample flash lights as shown in Figs. 3 and 11 respectively. In view of this, Steinberg '073 does in fact anticipate claim 18.

Regarding claims 4 and 5, the Applicant alleged (i.e., in page 14 of the remarks) "the combination of Steinberg '073 and Nakajima '659 fails to disclose or suggest a flash exposure that is a plurality of high-speed light pulse."

In response, the Examiner respectfully disagrees because Nakajima '659 clearly teaches the use of a plurality of **high-speed** light pulses (i.e., noted the plurality of light pulses having a predetermined relatively **short time** as shown in Figs. 4, 5 and 6) which are controlled by the controller (i.e., the CPU 6) to accomplish light adjusting control of the flash exposure.

Therefore, the Examiner continues to be of the opinion that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Steinberg '073 as taught by Nakajima '659, since Nakajima '659 stated at col. 6, lines 5+ that such a modification would increase the accuracy of the distance range of strobe photography. In view of this, claims 4 and 5 are considered obvious over the combination of Steinberg '073 and Nakajima '659.

Regarding claim 20, it is noted that claim 20 is also analyzed for the same reasons as discussed for claims 4 and 5 as set forth above, thus, the Applicant's attention is directed to the Examiner's comments as discussed above for claims 4 and 5.

Regarding claims 2, 3, 15 and 19, the Applicant alleged (in page 15+ of the remarks) "the combination of Steinberg '073 and Fukuda '490 does not disclose or suggest detecting the electrical load accumulation and **accomplishing light adjusting control based on the detected electrical load accumulation**".

In response, the Examiner respectfully disagrees because as clearly admitted by the Applicant in page 11, lines 6+ of the remarks "Steinberg '073 detects an amount of the electrical load accumulation . . . ", the combination of Steinberg '073 and Fukuda '490 does in fact discloses detecting the electrical load accumulation as claimed. However, it is noted that the features upon which applicant relies (i.e., **accomplishing light adjusting control based on the detected electrical load accumulation**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In this case, Fukuda '490 reference is merely used to show the "**resetting**" each of the at least one predetermined photoreceptor element during load accumulation to start a new electrical load, and reading the electrical load accumulation prior to each "**resetting**." (i.e., please see the detail rejection as discussed below). Further, the Examiner believes the explanations of how the limitations of claims 2, 3, 15 an 19 obvious over the combination of Steinberg '073 and Fukuda '490 are adequately set forth in the 103 rejection as discussed below, thus, the Examiner continues to be of the opinion that one skilled in the art would have been prompted to combine

the cited references (i.e., Steinberg '073 in view of Fukuda '490) for the reasons set forth in the 103 rejection as discussed follows:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 6-7, 13, 14, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Steinberg et al. (U.S. 6,151,073).

Regarding claim 1, Steinberg '073 discloses digital camera capable of flash photography by illuminating a photographic object (i.e., see Fig. 1), the digital camera comprising:

an image sensor (Fig. 1, the element 30) for sensing an image of the photographic object, the image sensor including a plurality of photoreceptor elements (i.e., noted that the element may be the solid state imaging device, such that CCD sensor; see col. 8, lines 20+), the image sensor being adapted for reading an electrical load accumulation of each of the at least one

predetermined photoreceptor element among the plurality of photoreceptor elements (i.e., noted that the CCD sensor of the element 31 contains plurality of pixels; see col. 8, lines 26+);

a detector for detecting an amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element due to light exposure on the at least one predetermined photoreceptor element when using a flash exposure for a duration of the flash exposure, and for outputting a corresponding detection signal (i.e., Figs. 1 & 3; col. 5, lines 10+, col. 6, lines 50+ and col. 8, lines 20+); and

a controller for accomplishing light adjusting control of the flash exposure based on the thus outputted detection signal (i.e., see Figs. 2 and 3; col. 5, lines 30+, col. 6, lines 20+ and col. 7, lines 15+).

Regarding claim 6, Steinberg '073 discloses a digital camera in accordance with claim 1, wherein the outputted detection signal corresponds to an average of the amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element (i.e., noted the use of a histogram for determining an average intensities of the image data; see Figs. 4A-4B; col. 5, lines 40+, col. 8, lines 20+ and col. 9, lines 20+).

Regarding claim 7, Steinberg '073 discloses a digital camera in accordance with claim 6, wherein the average of the amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element is a weighted average (i.e., noted the use of a histogram for weighting the average intensities of the image data; see Figs. 6A-6B; col. 5, lines 40+, col. 8, lines 20+ and col. 9, lines 20+).

Regarding claim 13, Steinberg '073 discloses a digital camera in accordance with claim 1, wherein a location of each of the at least one predetermined photoreceptor element is adjusted

according to photographic conditions (i.e., as discussed in col. 8, lines 40, that the number of sampling pixels selected form the CCD sensor may be arbitrarily selected based on the illumination conditions).

Regarding claim 14, Steinberg '073 discloses a digital camera capable of flash photography by illuminating a photographic object(i.e., see Fig. 1), the digital camera comprising:

a flash unit (Fig. 1, the element 26) for producing a flash exposure including at least one light pulse; an image sensor for sensing an image of the photographic object (Fig. 1, the element 30), the image sensor including a plurality of photoreceptor elements, the image sensor being adapted for reading an electrical load accumulation of each of the at least one predetermined photoreceptor element among the plurality of photoreceptor elements (col. 8, lines 20+);

a detector for detecting an amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element due to light exposure on each of the at least one predetermined photoreceptor element when using a flash exposure for a duration of the flash exposure, and for outputting a corresponding detection signal (i.e., Figs. 1 & 3; col. 5, lines 10+, col. 6, lines 50+ and col. 8, lines 20+); and

a controller for accomplishing light adjusting control of the flash exposure based on the thus outputted detection signal, the controller controlling a duration of the flash exposure (i.e., see Figs. 2 and 3; col. 5, lines 30+, col. 6, lines 20+ and col. 7, lines 15+).

Regarding claim 17, Steinberg '073 discloses wherein a location of each of the at least one predetermined photoreceptor element is adjusted according to photographic conditions (i.e.,

as discussed in col. 8, lines 40, that the number of sampling pixels selected form the CCD sensor may be arbitrarily selected based on the illumination conditions).

Regarding claim 18, Steinberg '073 discloses a method for light adjusting control of a digital camera capable of flash photography by illuminating a photographic object (Figs. 1-3), the digital camera (10) including an image sensor with a plurality of photoreceptor elements for sensing an image of the photographic object (Fig. 1, the elements 30), the method comprising the steps of:

accumulating an electrical load due to light exposure of each of at least one predetermined photoreceptor element among the plurality of photoreceptor elements when using a flash exposure (Fig. 2-3; col. 7, lines 15+ and col. 8, lines 20+);

detecting an amount of the thus accumulated electrical load of each of the at least one predetermined photoreceptor (i.e., col. 7, lines 15+ and col. 8, lines 5+);

outputting a detection signal corresponding to the thus detected amount of accumulated electrical load for a duration of the flash exposure (col. 8, lines 20+ and col. 9, lines 5+); and

accomplishing light adjusting control of the flash exposure based on the thus outputted detection signal (i.e., col. 7, lines 19+, col. 9, lines 5+ and col. 11, lines 20+).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4-5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinberg '073 in view of Nakajima (U.S. 6,069,659).

Regarding claims 4 and 5, Steinberg '073 discloses the flash exposure being a plurality of light pulses at predetermined intervals (i.e., noted that during pre-flashing period, a series of one or more flashes are activated during a predetermined intervals based on the predetermined capacitance values has been set by the processor unit 12 in the flash unit 26; see col. 4, lines 30, col. 5, lines 30+ and col. 11, lines 20+), wherein the step of accomplishing light adjusting control includes controlling a number of the plurality of light pulses (i.e., noted that during pre-flashing period, the flash unit 26 is controlled by the processor 12 to provide a series of one or more flashes, thereby the number of flashes pulses are controlled to adjust the flash energy for controlling proper exposure for the Final image data; see col. 4, lines 30, col. 5, lines 30+ and col. 11, lines 20+).

Furthermore, it is noted that although Steinberg '073 shows the plurality of light pulses are controlled during the pre-flashing period as discussed above, Steinberg '073 does not explicitly stated that such light pulses are "high-speed light pulses" as recited in the present claimed invention.

However, using "high-speed light pulses" during pre-flashing period in the digital camera is well known in the art as evidenced by Nakajima '659. In particular, Nakajima '659 shows the use of high-speed light pulses at predetermined intervals during preliminary flashing process (i.e., see Figs. 2 and 4-6 of Nakajima '659; col. 4, lines 15+ and col. 6, lines 5+), wherein the controller (i.e., the CPU 6) accomplishes light adjusting control of the flash exposure by controlling a number of the plurality of high-speed light pulses (i.e., col. 3, lines 25+, col. 4, lines

14+) so that the naked eye cannot feel a flicker, the subject will not have a sense of incongruity and feel the flashing as natural (col. 4, lines 50+). Moreover, Nakajima '659 further suggested that using the high-speed light pulses would increase the accuracy of the distance range of strobe photography (see col. 6, lines 5+).

In view of the above, having the system of Steinberg '073 and then given the well-established teaching of Nakajima '659, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Steinberg '073 as taught by Nakajima '659, since Nakajima '659 stated at col. 6, lines 5+ that such a modification would increase the accuracy of the distance range of strobe photography. Moreover, the subject will not have a sense of incongruity and feel the flashing as natural with the use of high-speed light pulses as taught by Nakajima '659 (i.e., see col. 4, lines 50+ of Nakajima '659).

Regarding claim 20, please see the Examiner's comment with respect to claims 4-5 as discussed above.

5. Claims 2-3, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinberg '073 in view of Fukuda et al. (U.S. 6,278,490).

Regarding claims 2 and 3, Steinberg '073 discloses the use of a charge couple device image sensor for capturing multiple images during the flashing period for adjusting the exposure of the image data by sampling the amount of the electrical load accumulation (i.e. the charges read out from the sensor 30; see Figs. 3, the steps 70, 86, 94, and 100) from at least one predetermined photoreceptor element of the sensor detected by the processor 12 and the image pickup unit 30 (i.e., see col. 8, lines 15+ of Steinberg '073), and performing cumulative addition

of the electrical load accumulation obtained by each reading (i.e., noted that the image data accumulated from the specific group of pixels of the image pickup device 30 may be added during each reading to generated the image data; see col. 8, lines 20+).

Furthermore, it is noted that although Steinberg '073 discloses that a each of the at least one predetermined photoreceptor element is adapted for capturing multiple images during pre-flashing period for control the flash exposure as discussed above, Steinberg '073 does not explicitly stated the "**resetting**" each of the at least one predetermined photoreceptor element during load accumulation to start a new electrical load, and reading the electrical load accumulation prior to each "**resetting**."

However, it is obviously well-known in the art as evidenced by the teaching of Fukuda '490 that the image sensor (i.e., the image sensor 1 as shown in Fig. 1; see col. 1, lines 15+ of Fukuda '490) is normally reset for each load accumulation of charges (i.e., see col. 1, lines 35+), and charges accumulated in the sensor (i.e., col. 1, lines 14+ of Fukuda '490) are read out before resetting the sensor for another load accumulation of charges for a new electrical load for accumulation charges from an initial state (i.e., noted the use of Vrs for resetting the image sensor for each load accumulation; see Figs. 6 and 7; col. 1, lines 35+, col. 8, lines 5+, col. 10, lines 45+). When the image sensor captures the multiple images (i.e., see Figs. 6 and 7 of Fukuda '490; also noted that multiple images are capturing in the system of Steinberg '073), the image sensor may be repeatedly resetting for accumulation charges in the sensor during each load accumulation, and performing cumulative addition (i.e., noted the use of the image synthesizing unit as taught by Fukuda '490; see col. 12, lines 5+) of the electrical load

accumulation obtained by each reading before resetting the sensor for another image load accumulation (i.e., see col. 1, lines 35+, col. 8, lines 5+, col. 10, lines 45+).

In view of the above, having the system of Steinberg '073 and then given the well-established teaching of Fukuda '490, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Steinberg '073 as taught by Fukuda '490, since Fukuda '490 stated at col. 3, lines 10+ that such a modification would provide wide dynamic range thereof.

Regarding claims 15 and 19, please see Examiner's comments with respect to claims 2 and 3 as discussed above.

Allowable Subject Matter

6. Claims 8-12 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
May 21, 2004